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REMARKS/ARGUMENTS

In the Final Office Action, the Examiner objected to the Abstract as being more than the recommended 50 to 150 words in length. Although the correspondence filed on January 5, 2005 included amendments to the Abstract, the present Final Office Action indicates that an Abstract on a separate sheet is required. As noted above, an Appendix including an amended Abstract is attached after sheet 19 of this paper. The amendments incorporated into the enclosed Abstract are the same as those originally presented in the correspondence of January 5, 2005. For completeness, those amendments have also been included in the preceding "Amendments to the Specification" section.

It is believed that the amended Abstract is within the recommended length of 50 to 150 words, and accordingly will be acceptable to the Examiner.

Regarding the rejection of claims 8, 9, 28 and 29 under 35 U.S.C. 112, second paragraph, as being indefinite, claims 8, 28 and 29 have been amended to remove references to X.500, and claim 9 has been cancelled. Therefore, none of the claims in the preceding listing of claims refer to X.500. It is thus respectfully submitted that all of the claims now comply with 35 U.S.C. 112, second paragraph, and that the claim rejections under this paragraph should be reconsidered and withdrawn. Since the rejection of claims 8, 28, and 29 has been traversed, these claims are believed to be allowable.

It appears from the Final Office Action Summary and paragraph 7 on page 3 of the Final Office Action that the Examiner intended to maintain the rejection of all of the former claims 1 to 55. It is noted, however, that claims 12, 31, 43 and 52 have not been rejected. These claims had been rejected under 35 U.S.C. 112, second paragraph, in the previous Office Action dated March 22, 2007. In response to that Office Action, the claims were amended to delete the allegedly indefinite phrase "from time to time", so as to fully address the rejection. Since that rejection has not been maintained in the Final Office Action, and the Final Office Action does not include a new rejection of those claims, it is believed that at least claims 12, 31, 43 and 52 are also allowable.

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The remaining claims 1 to 7, 10, 11, 13 to 27, 30, 32 to 42, 44 to 51 and 53 to 55 remain rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,725,240 (hereinafter "Asad") in view of "S/MIME Version 3 Certificate Handling" (hereinafter "Ramsdell") and in view of "UniCERT| Policy Support: Operational Controls" (hereinafter "UniCERT"). As discussed in detail below, the Applicants maintain that the rejected claims are not obvious in view of the combined teachings of the cited references.

The arguments submitted on July 19, 2007 in response to the previous Office Action, in which the same references were cited, are discussed on pages 2 and 3 of the Final Office Action.

The Examiner notes on page 2 of the Final Office Action that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. Although the references were to some extent discussed individually in the correspondence filed on July 19, 2007 in response to the previous Office Action, this appeared to be the most logical manner of presenting those arguments. It was the Applicants' intention to show that certain claimed features were absent from each of the references, and accordingly those features were also absent from the combination of references. It stands to reason that if none of the cited references teach certain claimed features, then those features cannot possibly be disclosed in a combination of the references.

In any case, the Applicants have made diligent effort to present the arguments below in respect of the combined teachings of the cited references.

According to the Final Office Action, Asad teaches an apparatus and method for protecting against data tampering in an audit subsystem and for creating and verifying audit logs in a relational database without compromising the ability to detect data tampering in a data processing system. Ramsdell suggests setting up a certificate database which in its simplest form would be local to a user and would function in a similar way as an address book. Contact information in Ramsdell may be in the form of the alternative name extension used in S/MIME as the preferred means to convey RFC-822 e-mail addresses that correspond to the entity for a certificate. In the paragraph entitled "Certificate Rollover" on page 2 of UniCERT, it is

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stated that the subject of a certificate should be informed when the certificate reaches the end of its validity, and should then apply for a new certificate.

It appears as though the Examiner is asserting that the audit system disclosed in Asad, when combined with the teachings of a certificate database and certificate rollover in Ramsdell and UniCERT, render the claimed invention obvious. Although such a combination might provide an audit system, a certificate database, and a mechanism for informing a message receiver or a certificate subject in the event of a problem with a certificate, the present claims include other features that would not be obvious from such combined teachings.

Considering first claim 1, this claim clearly recites maintaining a record-user mapping which associates with each of a plurality of record identifiers a respective one or more user names. In respect of this feature, paragraph 5 on page 3 of the Final Office Action refers to "maintaining the user name-addressable entity mapping from each user name to the respective addressable entity (See Ramsdell, page 5, Section 3)". This section of Ramsdell refers to various names and addresses that may be provided in certificates, but provides no disclosure whatsoever as to mapping record identifiers to user names.

Therefore, a combination of the cited references might include some sort of an audit system and a certificate database, which combination on its face might appear to be similar to the subject matter defined in claim 1. However, such a combination of the references would lack at least the claimed record-user mapping. This distinction might be most easily illustrated with reference to Figure 1 of the present application.

This figure shows a PKI server 10, which includes an audit record repository 14 and interacts with, among other elements, a remote notification tool 18 and a published certificate repository 12. It is suspected that the Examiner's position on obviousness is based primarily on the alleged disclosure of several pieces of this system in the cited references. As noted above, combining the teachings of the cited references might provide some sort of system in which an audit system, a certificate database, and an informing mechanism are implemented.

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Of particular note in Figure 1 is the element 24, the audit record-user mappings. As shown, and also as recited in claim 1, a record-user mapping associates with each of a plurality of record identifiers a respective one or more user names. The user names in the audit record-user mappings 24 are used by the remote notification tool 18 to obtain a respective addressable entity from the published certificate repository 12 for sending a notification of a record. This link between audit records and user names is entirely missing from the combined teachings of the cited references.

It is apparent from the Final Office Action as well as the previous Office Action that the certificate database disclosed in Ramsdell, and in particular the certificates that may be stored in such a database, are being interpreted by the Examiner as a form of user name-addressable entity mapping. From the foregoing discussion of claim 1 with reference to Figure 1 of the present application, it should now be clear that the method of claim 1 includes two different types of mappings. Even if one were to consider certificates that may be provided in a system which combines the teachings of all three of the cited references as being a form of user name-addressable entity mapping, the combined teachings would still lack any sort of record-user mapping, as clearly recited in claim 1.

In summary, claim 1 recites a method in which a record-user mapping specifies one or more user names associated with each of a plurality of record identifiers. For a record upon which remote notification is to be performed, the one or more user names associated with the record identifier of that record is obtained from the record-user mapping, and for each name, an addressable entity is obtained from a user name-addressable entity mapping. The claimed method involves not only obtaining an addressable entity for each user name, but also determining the particular user names for which remote notification of a record is to be generated. The combined teachings of the cited references lack any mechanism whatsoever for associating records with user names.

It is further respectfully submitted that remote notification as defined in claim 1 also would not be obvious from the combined teachings of the cited references. The references disclose, at most, informing an end user of a processing failure (see page 10 of Ramsdell) and

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informing the subject of a certificate that the certificate has expired (see page 2 of UniCERT). A person skilled in the art to which the present application pertains, however, would appreciate that informing a user of a problem with a certificate, as proposed in Ramsdell, is not at all analogous to remote notification as claimed. When a user receives a message and an attached certificate, for example, the certificate is processed and a determination is made as to whether the certificate is actually valid and is associated with the message with which it was received. In the event that a certificate is not valid or is not associated with the message, an error or other indication is provided to the receiving user. When a certificate is being used to generate a message to be sent to the subject of a certificate, an error or other indication would similarly be provided, locally, to the user of the certificate, and not to the actual holder of the certificate.

In the proverbial example of "Alice" and "Bob", if a problem with Bob's certificate is detected when Alice is processing a secure message that is received from or is to be transmitted to Bob, an error or other indication is provided only locally to Alice. Bob is not typically notified of the problem with his certificate.

In the context of certificate rollover, the subject of a certificate might be informed when the certificate has expired. Such expiry affects the certificate itself. Thus, when a certificate expires, the subject of that certificate, Bob in the above example, might be informed.

The present claimed invention provides a much more generic remote notification mechanism. An audit record can be associated with any user names. These user names are then used to obtain addressable entities for remote notification. The combined teachings of the cited references may provide for a local error indication in the event of a certificate processing failure or informing the subject of a certificate of expiry of the certificate itself. The local indication of a processing failure cannot be reasonably interpreted as a form of remote notification, and informing a certificate subject of expiry of the certificate does not contemplate the claimed notion of identifying addressable entities for remote notification based on a record-user mapping.

Claim 1 is thus patentable over the combination of Asad, Ramsdell, and UniCERT for at least these reasons.

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Claims 2 to 8 and 10 to 19 depend from claim 1 and are patentable over the cited references for at least the same reasons as claim 1.

Independent claim 37 is an apparatus counterpart to the method claim 1, and recites, *inter alia*, a record-user mapping memory structure which associates for each of a plurality of record identifiers a respective one or more user names, and a record processing entity adapted to obtain one or more user names for the record identifier of a record from the record-user mapping, and to obtain for each user name a respective addressable entity from a user name-addressable entity mapping. A notification of a record is sent to the addressable entity through a notification interface.

Independent claim 37 thus patentably distinguishes over the combination of the cited references for similar reasons as claim 1. At least the claimed record-user mapping memory structure and the remote notification mechanism implemented using that memory structure and the claimed record processing entity would not be obvious from the combined teachings of the cited references.

Claims 38 to 45 depend from claim 37 and are patentable for at least similar reasons.

Considering now independent claim 20, this claim refers to identifying at least one record identifier for which target record processing is to be performed. For a record identifier for which target record processing is to be performed, a target user name that identifies a user name which was a target of an operation which resulted in the record is read from an associated record, a respective addressable entity for the target user name is obtained from a user name-addressable entity mapping, and a notification of the record is sent to the addressable entity.

According to the combined teachings of the cited references, an audit client from which an event is received is notified of any of various failures during audit record creation. This is disclosed, for example, in column 8, line 53 to column 9, line 27 of Asad. Thus, the audit client that reports an event is notified if a failure occurs during creation of an audit record for that event. It would be readily apparent to any person skilled in the art to which the present application pertains that an audit client that reports an event is not the target of an operation which resulted in a record, as recited in claim 20.

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If one were to suppose that, in a system that combines the teachings of the cited references, an audit client reports an event that affects a certificate stored in a certificate database, then that audit client, and not the subject of the certificate, would be notified of a failure during creation of an audit record for that event. The cited references provide no suggestion or teachings whatsoever as to any other notification relating to an audit record.

Therefore, at least the features of reading from an associated record a target user name which identifies a user name which was a target of an operation which resulted in the record, obtaining an addressable entity for the target user name from a user name-addressable entity mapping, and sending a notification of the record to the addressable entity patentably distinguish claim 20 over the cited references. Claims 21 to 36 depend from claim 20 and are patentable over the cited references for at least the same reasons.

Independent claim 46 is an apparatus counterpart of the method claim 20, and accordingly claim 46 and its dependent claims 47 to 52 are patentable over the cited references for similar reasons as claim 20.

Finally, claims 53 to 55 depend from preceding claims and are patentable over the cited references for at least the same reasons as the claims from which they depend.

It is thus respectfully submitted that all of the claims remaining in the application are patentable over the cited references. Reconsideration and withdrawal of the claim rejections under 35 U.S.C. 103(a) are respectfully requested.

The Applicants note that the rejection of claims 8, 28, and 29 and the rejection of claims 12, 31, 43 and 52 have been traversed, and at least these claims should be allowed. The remaining claims are also allowable over the cited references, as discussed in detail above.

The present amendments and arguments are intended to place the application into allowable form, and therefore entry and consideration thereof are respectfully requested.

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It is further noted that the claims originally presented in this application were at one point considered to be allowable. The Applicants respectfully submit that this was the correct finding in respect of this application, and that the claims remain allowable over all references of record.

In the event that any further issues remain to be resolved in order to place the application into allowable form, the Examiner is invited to contact the undersigned by telephone, so as to most quickly resolve such issues.

Respectfully submitted,

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